

## EAST Search History

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
L1	791	squalene adj synthase	US-PGPUB; USPAT; DERWENT	OR	ON	2006/10/11 12:03
L2	12	squalene adj synthase and phaffia	US-PGPUB; USPAT; DERWENT	OR	ON	2006/10/11 12:10
L3	5	squalene adj synthase and phaffia and polynucleotide	US-PGPUB; USPAT; DERWENT	OR	ON	2006/10/11 12:13
L4	97	squalene adj synthase and polynucleotide	US-PGPUB; USPAT; DERWENT	OR	ON	2006/10/11 12:13

RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

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=> save
ENTER L#, L# RANGE, ALL, OR (END):end

=> s squalene (w) synthase and gene
L2      0 SQULENE (W) SYNTHASE AND GENE

=> s squalene (w) synthase and gene
L3      678 SQUALENE (W) SYNTHASE AND GENE

=> s l3 and dna
L4      219 L3 AND DNA

=> s l4 and polynucleotide
L5      0 L4 AND POLYNUCLEOTIDE

=> s l4 and phaffia
L6      2 L4 AND PHAFFIA

=> d ibib abs l6 1-2
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L6 ANSWER 1 OF 2 CAPLUS COPYRIGHT 2006 ACS on STN  
 ACCESSION NUMBER: 2005:2264 CAPLUS  
 DOCUMENT NUMBER: 142:87717  
 TITLE: Methylomonas and Staphylococcus carotenoid  
 biosynthesis genes and enzymes and methods  
 for producing C30 carotenoid omega aldehydes in  
 transgenic organisms  
 INVENTOR(S): Cheng, Qiong; Tao, Luan  
 PATENT ASSIGNEE(S): E. I. Du Pont De Nemoure and Company, USA  
 SOURCE: U.S. Pat. Appl. Publ., 58 pp.  
 CODEN: USXXCO  
 DOCUMENT TYPE: Patent  
 LANGUAGE: English  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 2004268436	A1	20041230	US 2004-860291	20040603
US 7098000	B2	20060829		
WO 2005079183	A2	20050901	WO 2004-US18203	20040604
WO 2005079183	A3	20060309		
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW RW: BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
EP 1633862	A2	20060315	EP 2004-809435	20040604
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU, PL, SK, HR				
PRIORITY APPLN. INFO.:			US 2003-475743P	P 20030604
			WO 2004-US18203	W 20040604

AB The invention relates to methods of producing C30 carotenoid compds. via the engineering of a host cell expressing genes encoding a combination of the enzymes diapophytoene synthase, diapophytoene

desaturase, and an oxidase for introducing an omega-aldehyde functional group on the omega carbon of a conjugated polyene carbon skeleton. Specially, various combination of CrtM, sqs, CrtN and CrtN2 genes from *Methylomonas* and *Staphylococcus* can be co-expressed in transformant hosts, leading to the production of diaponeurosporene monoaldehyde, diapocarotene monoaldehyde, diapocarotene dialdehyde and functional derivs. The sequences of squalene synthase, diapophytoene desaturase, aldehyde dehydrogenase and omega-aldehyde introducing enzyme from *Methylomonas* are provided. The sequences of dehydrosqualene synthase, diapophytoene desaturase, and omega-aldehyde introducing enzyme from *Staphylococcus* are provided.

REFERENCE COUNT: 38 THERE ARE 38 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L6 ANSWER 2 OF 2 CAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 2004:287918 CAPLUS

DOCUMENT NUMBER: 140:298637

TITLE: Isolation and cloning of squalene synthase gene of *Phaffia rhodozyma* or *Xanthophyllomyces dendrorhous* for improved production of carotenoids in transgenic fish  
INVENTOR(S): Hoshino, Tatsuo; Ojima, Kazuyuki; Setoguchi, Yutaka  
PATENT ASSIGNEE(S): DSM Ip Assets B.V., Neth.  
SOURCE: PCT Int. Appl., 55 pp.  
CODEN: PIXXD2

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2004029255	A2	20040408	WO 2003-EP10573	20030923
WO 2004029255	A3	20040527		
W:	AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW			
RW:	GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG			
CA 2498800	AA	20040408	CA 2003-2498800	20030923
AU 2003273922	A1	20040419	AU 2003-273922	20030923
EP 1543115	A2	20050622	EP 2003-757888	20030923
R:	AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU, SK			
JP 2006500054	T2	20060105	JP 2004-538991	20030923
CN 1777681	A	20060524	CN 2003-822615	20030923
US 2006160172	A1	20060720	US 2005-528872	20050929
PRIORITY APPLN. INFO.:			EP 2002-21619	A 20020927
			WO 2003-EP10573	W 20030923

AB The present invention relates to a gene useful in a process to increase the microbial production of carotenoids. In particular, it relates to isolation and cloning of squalene synthase gene of *Phaffia rhodozyma* or *Xanthophyllomyces dendrorhous* for improved production of carotenoids in transgenic fish. The carotenoids astaxanthin is distributed in a wide variety of organisms such as animals, algae and microorganisms. It has a strong antioxidant property against reactive oxygen species. Astaxanthin is used as a coloring reagent, especially in the industry of farmed fish, such as salmon, because astaxanthin imparts distinctive orange-red coloration to the animals and

contributes to consumer appeal in the marketplace.

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